

REMARKS

In the Claims

Claim 1 has been amended. No new matter has been added to the application by virtue of the present amendment.

Accordingly, claims 1-10 are pending in the subject application. It is respectfully requested that the pending claims 1-10 be reconsidered and passed to issuance in view of this response.

Claim Rejections

In the Office Action, pending claims 1-5 and 7 stand rejected under 35 U.S.C. 102 in view of the Cunningham reference, U.S. patent 6,177,697 B1 (the '697 patent). In response, Applicants respectfully submit that this reference, taken alone or in combination with any other reference of record, neither teaches nor suggests the invention as recited in the claims as presented herein.

In the invention, a trench having a depth approximating that of the isolation trenches is used to provide a trench capacitor. The capacitor trenches are formed "... adjacent to each other and located in a second region of the semiconductor substrate in which said plurality of isolation filled trenches are absent ..." In the '697 reference, the capacitor trench 14 is formed in the same regions as the isolation trenches 10 (see FIG. 1). The capacitor trenches 14 and the isolation trenches 10 are not only in the same regions, they are next to one another. The '697 reference is a divisional of the 6,087,214 Cunningham reference discussed and distinguished in paragraphs 6 and 7 of the present specification. The '697 reference utilizes isolation trenches in close proximity to the capacitor trenches to provide cell-to-cell isolation, increasing total cell area. In

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the invention, the capacitor trenches are formed adjacent to each other and located in regions (i.e. "second region") where there are no isolation trenches between adjacent capacitor trenches. This is neither shown nor suggested by the '697 reference. If anything, the '697 reference teaches away from the combination of features recited in claim 1. Accordingly, Applicants respectfully submit that the rejection of claims 1-5 and 7 as being anticipated by the '697 reference has been traversed.

In the Office Action, claims 6 and 9 stand rejected under 35 U.S.C. 103 in view of a combination of the teachings of the '697 patent and U.S. patent 5,183,774 ("Sato"). In response, Applicants respectfully submit that the Sato reference, taken alone or in combination with any other reference of record, neither teaches nor suggests the invention as recited in these claims.

Applicants respectfully submit that the aforementioned shortcomings of the teachings of the '697 patent are not addressed by the Sato reference. As the Examiner expressly states in the Final Office Action of March 24, 2003, the Sato reference is relied upon for teaching the thickness of the insulating material at the bottom wall of the plurality of holes is thicker than the thickness of the insulating material at the sidewall of the plurality of holes. Thus, Sato does not remedy the deficiencies of the '697 patent as described above. Accordingly, Applicants respectfully submit that the rejection of record to claims 6 and 9 has been traversed.

In the Office Action, claims 8 and 10 stand rejected under 35 U.S.C. 103 in view of a combination of the teachings of the '697 patent and U.S. patent 6,437,369 ("Tang"). In response, Applicants respectfully submit that the Tang reference, taken alone or in combination with any other reference of record, neither teaches nor suggests the invention as recited in these claims.

Applicants respectfully submit that the aforementioned shortcomings of the teachings of

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the '697 patent are not addressed by the Tang reference. As the Examiner expressly states in the Final Office Action of March 24, 2003, the Tang reference is relied upon for teaching that the depth of the holes are greater than the plurality of isolation-filled trenches; the substrate has a buried insulation region; and, a plurality of holes that extend into the buried insulation region. Thus, Tang does not remedy the deficiencies of the '697 patent as described above. Accordingly, Applicants respectfully submit that the rejection of record to claims 8 and 10 has been traversed.

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CONCLUSION

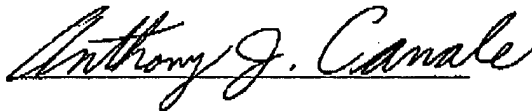
In light of the foregoing amendments and remarks, all of the claims now presented are believed to be in condition for allowance, and Applicants respectfully request that the outstanding rejections be withdrawn and this application be passed to issue at an early date.

The Examiner is urged to call the undersigned at the number listed below if, in the Examiner's opinion, such a phone conference would aid in furthering the prosecution of this application. Applicants request a one month extension of time by virtue of the present response. Please charge Applicants' deposit account, 09-0456, a fee of \$110 for a one month extension of time which is due by virtue of this response, and for any additional fee that the PTO determines is due.

Respectfully Submitted,

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